

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1 (previously amended) A method of producing a heterologous antibody by an avian cell comprising:

culturing a fibroblast, oviduct, embryonic, germ-line, ovum, or testicular avian cell transfected with at least one expression vector comprising a nucleotide sequence encoding an immunoglobulin polypeptide under conditions allowing for the expression of the nucleotide sequence,

culturing the avian cell under conditions wherein the avian cell produces an immunoglobulin polypeptide that forms an antibody that selectively binds an antigen or an immunoglobulin polypeptide that, when isolated and then combined with a light chain or heavy chain, forms an antibody that selectively binds an antigen,

thereby producing a heterologous antibody.

Claim 2 (previously amended) The method of Claim 1, wherein the immunoglobulin polypeptide is selected from the group consisting of an immunoglobulin heavy chain variable region, an immunoglobulin heavy chain variable region and a constant region, an immunoglobulin light chain variable region, an immunoglobulin light chain variable region and a constant region and a single-chain antibody comprising two linked immunoglobulin variable regions.

Claim 3 (previously amended) The method of Claim 1, wherein the expression vector further encodes a second immunoglobulin polypeptide and an internal ribosome entry site (IRES).

Claim 4 (previously amended) The method of Claim 1, wherein the immunoglobulin polypeptide has a peptide region for the isolation of the immunoglobulin polypeptide.

Claim 5 (previously amended) The method of Claim 1, wherein the avian cell is selected from the group consisting of a chicken cell, a turkey cell, a duck cell, a goose cell, a quail cell, a pheasant cell, a ratite cell, an ornamental bird cell and a feral bird cell.

Claim 6 (cancelled).

Claim 7 (previously amended) The method of Claim 1, wherein the avian cell is an oviduct cell or an embryonic cell.

Claim 8 (canceled)

Claim 9 (previously amended) The method of Claim 1, wherein the expression vector is selected from a viral vector, a plasmid vector, or a linear nucleic acid vector.

Claim 10 (previously amended) The method of Claim 9, wherein the expression vector is a viral vector selected from the group consisting of avian leucosis virus, adenoviral vectors, transferring-polylysine enhanced adenoviral vectors, human immunodeficiency virus vectors, lentiviral vectors, Moloney murine leukemia virus-derived vectors and variants hereof.

Claim 11 (original) The method of Claim 9, wherein the expression vector is a plasmid vector.

Claim 12 (original) The method of Claim 1, wherein the expression vector includes a constitutively active promoter.

Claim 13 (original) The method of Claim 12, wherein a transcriptional promoter of the expression vector is a cytomegaloviral promoter.

Claim 14 (original) The method of Claim 1, wherein a transcriptional promoter of the expression vector is a tissue-specific promoter.

Claim 15 (previously amended) The method of Claim 14, wherein the tissue-specific promoter directs expression in oviduct cells of an avian species.

Claim 16 (previously amended) The method of Claim 15, wherein the tissue-specific promoter is selected from the group consisting of promoters of the genes encoding ovalbumin, lysozyme, ovomucoid, ovotransferrin (conalbumin) and ovomucin.

Claim 17 (previously amended) The method of Claim 1, wherein a transcriptional promoter of the expression vector is a regulatable promoter.

Claim 18 (previously amended) The method of Claim 1, wherein a transcriptional terminator of the expression vector comprises a region encoding a bovine growth hormone transcriptional terminator.

Claim 19 (previously amended) The method of Claim 1, wherein the immunoglobulin polypeptide is an immunoglobulin heavy chain variable region or a variant thereof.

Claim 20 (original) The method of Claim 19, wherein the immunoglobulin heavy chain further comprises a D region, a J region and a C region

Claim 21 (previously amended) The method of Claim 1, wherein the immunoglobulin polypeptide is an immunoglobulin light chain variable region or a variant thereof.

Claim 22 (original) The method of Claim 21, wherein the immunoglobulin light chain further comprises a J region and a C region.

Claim 23 (original) The method of Claim 19, wherein the immunoglobulin polypeptide is a mammalian or an avian immunoglobulin heavy chain polypeptide.

Claim 24 (original) The method of Claim 23, wherein the immunoglobulin heavy chain polypeptide comprises at least two domains derived from at least two animal species.

Claim 25 (previously amended) The method of Claim 23, wherein the mammal is selected from the group consisting of a human, a mouse, a rat, a rabbit, a goat, a sheep, a cow or a horse, and wherein the avian is a chicken, a turkey, a duck, a goose, a quail, a pheasant, a ratite, an ornamental bird and a feral bird.

Claim 26 (original) The method of Claim 1, wherein the immunoglobulin polypeptide is a mammalian or an avian immunoglobulin light chain polypeptide.

Claim 27 (original) The method of Claim 26, wherein the immunoglobulin polypeptide comprises at least two domains derived from at least two animal species.

Claim 28 (previously amended) The method of Claim 26, wherein the mammal is selected from the group consisting of a human, a mouse, a rat, a rabbit, a goat, a sheep, a cow or a horse, and wherein the avian is a chicken, a turkey, a duck, a goose, a quail, a pheasant, a ratite, an ornamental bird and a feral bird.

Claim 29 (previously amended) The method of Claim 1, wherein the immunoglobulin polypeptide comprises an immunoglobulin heavy chain variable region, an immunoglobulin light chain variable region, and a linker peptide, and thereby forming a single-chain antibody.

Claims 30– 61. (cancelled).

Claim 62 (previously added) The method of Claim 1, wherein the immunoglobulin polypeptide is human.

Claim 63 (previously added) The method of Claim 1, wherein the immunoglobulin polypeptide is humanized.

Claim 64 (previously added): A method of producing an antibody specific for CTLA4 comprising:

introducing a nucleotide sequence which encodes an antibody specific for CTLA4 into an avian cell under conditions allowing for expression of the nucleotide sequence; and

culturing the avian cell under conditions wherein the nucleotide sequence is expressed,

thereby producing an antibody specific for CTLA4.

Claim 65 (previously added): The method of claim 64, wherein the nucleotide sequence is included on an expression vector.

Claim 66 (previously added): The method of claim 64, wherein the nucleotide sequence comprises a transcription unit having a nucleotide sequence encoding the antibody specific for CTLA 4.

Claim 67 (previously added): The method of claim 64, wherein the nucleotide sequence is operably linked to a transcription promoter and a transcription terminator

Claim 68 (previously added): The antibody of claim 64, wherein the antibody is a monoclonal antibody.

Claim 69 (withdrawn): The method of Claim 64, wherein the avian cell is selected from the group consisting of a chicken cell, a turkey cell, a duck cell, a goose cell, a quail cell, a pheasant cell, a ratite cell, an ornamental bird cell and a feral bird cell.

Claim 70 (previously added) The method of Claim 64, wherein the avian cell is a chicken cell.

Claim 71 (currently amended): The antibody of claim 64 wherein the avian cell is ~~selected from the group consisting of a fibroblast, an oviduct, a testicular, a sperm, an ovum, an embryonic and a germ-line~~ cell.

Claim 72 (previously added) The method of Claim 64 ~~1~~, wherein the antibody is a human antibody.

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Claim 73 (withdrawn): An antibody specific for CTLA4 produced according to the method of claim 64.